

REMARKS

Claims 1-12 have been examined. Claims 11 and 12 have been allowed. Claims 1 and 4 have been amended to clarify the subject matter. Claim 1 has been amended to incorporate some of the features of claim 4. Furthermore, the amendments to claims 1 and 4 are supported, for example, by the description on page 9, line 1 to page 12, line 25. No new matter has been added.

Claim Rejections – 35 USC §103

Claims 1 to 10 have been rejected as being unpatentable over Lin in view of Shimizu. It is alleged that Lin teaches everything in claims 1 and 4 except removing the oxide layer on the second device formation region along with the oxidation resistant film on the second formation region, and forming a new oxidation by thermal oxidation. However, the Examiner continues on to state that Shimizu teaches these omitted steps. Applicants submit that none of the references, alone or in combination, teach or suggest the present invention as claimed for the following reasons. Claim 1 as amended recites:

1. (Currently Amended) A semiconductor device manufacturing method comprising:
providing a substrate having a first formation area and a second formation area;
forming an oxide film on the first and the second formation areas;
forming an oxidation resistance film on the oxide film;
masking the second formation area by disposing a photoresist on the oxidation resistance film above the second formation area;
removing the oxidation resistant film above the first formation area;
removing the photoresist above the second formation area;
removing the oxide film above the first formation area while using the oxidation resistant film above the second formation area as a mask;
forming a first oxide film on the first formation area;
removing the oxide film on the second formation area and the oxidation resistance film above the second formation area without forming a photoresist; and
forming a second oxide film on the second formation area, wherein the first oxide film has thickness different from the second oxide film. (Emphasis added)

At least the above bolded features are not disclosed, taught, or suggested by the cited prior art. Shimizu removes the oxidation resistant film 301 and the thin oxide 201 while the photoresist film 402 is still disposed on the first device formation area (Fig. 2E). Thus, assuming

arguendo that a person of ordinary skill in the art would combine the teachings of Lin and Shimizu, what he would have been taught is to place another photoresist layer on the second active region 22 of Lin, and then remove the first gate oxide layer 23 from the first active region 21. Then, he would have been taught to remove the photoresist layer from the second active region 22 and supplant an oxide layer over the first and second active regions by oxidation. Applicants respectfully assert that a person of ordinary skill in the art would not have been taught to remove the oxide layer on the second formation area along with the oxidation resistant film on the second formation region, and forming a new oxidation by thermal oxidation without the additional step of forming another photoresist layer. In the present invention, this additional photoresist layer is not needed. Thus, at least for this reason, claim 1 is not taught or suggested by the cited prior art references alone or in combination.

Dependent claims 2 and 3 are not taught or suggested at least for the same reason as claim 1.

Claim 4 as amended recites:

4. (Currently Amended) A semiconductor device manufacturing method comprising:
forming a device separation film on the semiconductor;
forming an oxide film on a first transistor formation area and a second transistor formation area by performing thermal oxidization using the device separation film as a mask;
forming an oxidation resistant film across the entire surface of the semiconductor;
removing the oxidation resistant film on the first transistor formation area by using a photoresist film as a mask;
removing the photoresist film;
removing the oxide film on the first transistor formation area by using the oxidation resistant film on the second transistor formation area as a mask;
forming a first oxide film by performing thermal oxidization by using the oxidation resistant film formed on the second transistor formation area as a mask;
removing the oxidation resistant film and the oxide film on the second transistor formation area without forming a photoresist; and
forming a second oxide film on the second transistor formation area by performing thermal oxidization, wherein the first oxide film has thickness different from the second oxide film. (Emphasis added.)

At least the above bolded features are not disclosed, taught, or suggested by the cited prior art for at least the reasons detailed above. Moreover, none of the references show using an oxidation resistant film as a mask for removing an oxide film and forming a first oxide film having different thickness than a second oxide film. Thus, at least for these reasons, claim 4 is not taught or suggested by the cited prior art references alone or in combination.

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Page : 9 of 9

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Dependent claims 5 to 10 are not taught or suggested at least for the same reason as claim
4.